FISHERIES MANAGEMENT AND EVALUATION PLAN

Middle Columbia River
Distinct Population Segment

Umatilla River

Summer Steelhead, Trout and Warmwater Fisheries

Prepared by
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Fishery Management and Evaluation Plan

Middle Columbia River DPS

Umatilla River Sport Fisheries

Responsible Management Agency.

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SECTION 1. FISHERIES MANAGEMENT

1.1) General objectives of the FMEP.

The general objective of this FMEP is to conduct a consumptive sport fishery on hatchery steelhead consistent with recovery of the ESA listed steelhead. This FMEP includes all freshwater sport fisheries, which affect or could potentially affect the survival and recovery of listed steelhead in the Umatilla subbasin.

1.1.1) List of the "Performance Indicators" for the management objectives.

The abundance performance indicator is 6-year average wild adult steelhead escapement of at least 650 unmarked steelhead, which is approximately 2 times the viable threshold as determined by Chilcote (2001), (Appendix A). The long-term escapement goal for wild steelhead in the Umatilla is 1,666 fish. This level of escapement, 1,666, is expected to result in the maximum production of wild fish based upon a spawner – recruit analysis presented by Chilcote (2001).

The harvest performance indicator is that sport fisherman harvest **30%** of the hatchery steelhead returning to the Umatilla River. The impact of this fishery plus those in the mainstem Columbia River shall not cause more than a **20%** cumulative mortality rate on wild Umatilla steelhead. To accomplish this objective the sport fisheries within the Umatilla basin will be managed to limit the mortality impact on wild steelhead to **5%**.

Additionally, sport harvest will be used as a tool to manage the number of hatchery origin fish escaping to spawn. Oregon Department of Fish and Wildlife's (ODFW) objective is to manage for a maximum of 30% of the annual spawning population being of hatchery origin. All incidentally caught wild steelhead caught by sport fisherman are released back to the river unharmed.

1.1.2) Description of the relationship and consistency of harvest management with artificial propagation programs.

Harvest Management

Umatilla River steelhead sport fishery management is directed at the harvest of hatchery steelhead produced by the hatchery program discussed below. The season length (September 1 – April 15) and open area (mouth to west Reservation boundary) seek to maximize harvest opportunity of hatchery steelhead while minimizing impacts to wild fish. The open season encompasses the period of adult immigration into the Umatilla River. Few steelhead return after mid-April; therefore, opportunity is maximized. The open area includes approximately 56 miles of the mainstem Umatilla River and does not include spawning areas of wild summer steelhead. The bag limit of 3 hatchery steelhead per day with no annual limits seeks to balance maximization of harvest and equally distribute the harvest among the angling population.

The NMFS (NOAA Fisheries) Draft Biological Opinion on the collection, rearing, and release of salmonids associated with artificial propagation programs in the Middle Columbia Steelhead Evolutionarily Significant Unit (ESU[1]) (NMFS 2001) proposes additional measures that will increase harvest of hatchery steelhead. Specifically, NOAA Fisheries suggests the identification of management actions that will permit the increased harvest of hatchery steelhead and identify additional smolt acclimation facilities that will provide for greater harvest opportunity.

The ODFW agrees with NOAA Fisheries recommendations. The catch of hatchery steelhead in the Umatilla River has been disappointing, ranging from 7.2 to 20.3 percent of the run since the 1992-93 run year (Table 1). However, actions such as proposed by NMFS cannot be implemented without agreement with Bonneville Power Administration (BPA) and Confederated Tribes of the Umatilla Indian Reservation (CTUIR). CTUIR has not indicated support of developing additional acclimation sites for the purpose of increasing harvest of hatchery fish. ODFW will seek to gain consensus with BPA and CTUIR on this issue. As an interim measure, use of existing acclimation facilities has been reprogrammed so that steelhead smolts are released in closer proximity to the area open to sport steelhead angling.

ODFW current approach to increase harvest of hatchery origin steelhead is to increase angling opportunity by improving angler access. Access to the Umatilla River is limited because almost all land adjacent to the river is under private ownership. As would be

[1] An 'evolutionarily significant unit' (ESU) of Pacific salmon (Waples 1991) and a 'distinct population segment' (DPS) of steelhead (71 FR 834, January 5, 2006) are considered to be 'species,' as defined in Section 3 of the ESA.

expected, willingness of landowners to allow public entry for angling is varied. ODFW has a long range plan of developing drift boat access points throughout the steelhead fishery open area. To date, ODFW has constructed one drift boat ramp in the Pendleton area. Two additional drift boat ramps are planned for construction in 2007 or 2008. Our long-term goal is to develop 8-10 drift boat launch sites. Where possible, drift boat sites will also include areas for bank angler access.

Artificial Production Programs

An endemic brood hatchery program is currently supplementing steelhead in the Umatilla Basin. The supplementation program seeks both to provide harvest opportunities for Indian and non-Indian fishers and to supplement natural production (CTUIR and ODFW 1990a; CTUIR and ODFW 1990b). The current sport fishery is regulated to harvest only hatchery-produced steelhead. Those hatchery fish that escape the fishery have the opportunity to spawn naturally.

The hatchery program's intent is to maintain the genetic integrity of the natural population while providing progeny that will add to natural production and provide a harvestable surplus (CTUIR and ODFW 1990a; CTUIR and ODFW 1990b). To accomplish this goal, nearly all broodstock collected for the program are of wild origin. The broodstock are collected proportionally throughout the cross-section of the wild run. Wild run timing over the past decade has been used to develop a broodstock collection schedule by month. From brood years 1992-2005, an averaged of 111 wild steelhead and 27 hatchery steelhead were collected for broodstock, representing 7.5% and 4.3% of their respective return to Three Mile Falls Dam. Not all brood collected are spawned because hatchery fish are only used when insufficient numbers of wild fish are available to meet the 3X3 spawning matrix protocol or egg take goal. Actual numbers of steelhead spawned averaged 80 wild and 9 hatchery or 5.5% and 1.5% of their respective return to Three Mile Falls Da.m. Unused brood are released back to the river or sacrificed for coded-wire tag recovery.

Genetic analyses done by Currens and Schreck (1993 and 1995) have not shown any statistically significant differences in genetic or phenotypic characteristics between hatchery and wild *O. mykiss* in the Umatilla as a result of the Umatilla Hatchery Program. However, resident trout upstream from McKay Reservoir (not included in the DPS) were shown to have been influenced by trout stocking.

Table 1. Descriptive statistics for the steelhead fishery in the Umatilla River, run years 1998-99 through 2003-04. Catch statistics were based on creel surveys conducted in the lower river (Umatilla mouth to Three Mile Falls Dam) and Upper River (RM 42 to west boundary of the CTUIR).

Run year	Run size[a]		Number caught		Percent of run caught		Percent of run harvested
	Wild	Hatchery	Wild	Hatchery	Wild	Hatchery	Hatchery
92-93[b]	1,297	632	127	50	9.8	7.9	6.0
93-94	945	359	37	26	3.9	7.2	5.3
94-95	874	697	172	85	19.7	12.2	8.8
95-96	1,296	820	162	70	12.5	8.5	7.3
96-97	1,014	1,529	180	116	17.8	7.6	6.0
97-98	862	992	238	144	27.6	14.5	10.2
98-99	1,135	804	272	132	24.0	16.4	12.6
99-00	2,140	826	454	100	21.2	12.1	9.4
00-01	2,571	1,178	181	114	7.0	9.7	7.6
01-02	3,621	2,042	733	260	20.2	12.7	10.0
02-03	2,117	1,077	254	142	12.0	13.2	11.0
03-04	2,101	1,354	292	113	13.9	8.3	6.1
04-05	1,722	811	197	91	11.4	11.2	9.4
05-06	1,480	497	375	101	25.3	20.3	11.7
Mean	**1,655**	**973**	**262**	**110**	**15.9**	**11.3**	**8.7**

[a] *Run size = number counted at Three Mile Falls Dam plus harvest from Three Mile Falls Dam to the Umatilla River mouth.; Wild steelhead run = number counted at Three Mile Falls Dam.*

[b] *Origin of released fish not recorded in 1992-93. We estimated 24% of hatchery steelhead caught were released in 1992-93 based on the 1992-93 thru 2005-06 average percent of hatchery steelhead caught that were released.*

1.1.3) General description of the relationship between the FMEP objectives and Federal tribal trust obligations. (This will be further addressed in section 4).

There is a Memorandum of Agreement between the ODFW and the CTUIR which sets the foundation for the parties to co-manage anadromous fishery resources in the Umatilla Basin. All hatchery production plans and related harvest plans for anadromous fish in the Umatilla basin have been jointly developed by the parties to reflect the direction of the Columbia River Fish Management Plan (U.S. v Oregon). All anadromous sport fishery angling regulations are developed on a consensus basis with the CTUIR.

Because the Umatilla anadromous fishery restoration programs are jointly implemented by ODFW and CTUIR, agreement and cooperation on behalf of the CTUIR is necessary to implement this FMEP.

The ODFW and CTUIR differ substantially on their management intent with regard to the disposition of hatchery origin steelhead returning to the Umatilla River. The ODFW Native Fish Conservation Policy (NFCP) provides the Department's direction with regard to this issue. Under the NFCP Interim Criteria, limits the percentage of hatchery origin spawners within a native fish population. The assessment by Chilcote (2001) indicates that a maximum of 30% hatchery origin spawners in the natural spawning population should be attained to increase the probability of population persistence. The CTUIR's management intent is to not differentiate the origin of returning steelhead and to maximize total spawners.

1.2) Fishery management area(s):

1.2.1) Description of the geographic boundaries of the management area of this FMEP.

The management area for this FMEP is the Umatilla basin except the McKay Creek drainage above McKay Reservoir and the Butter Creek drainage. Both the McKay and Butter creek drainage's historically supported steelhead, but do so no longer due to passage barriers. See Figure 1.

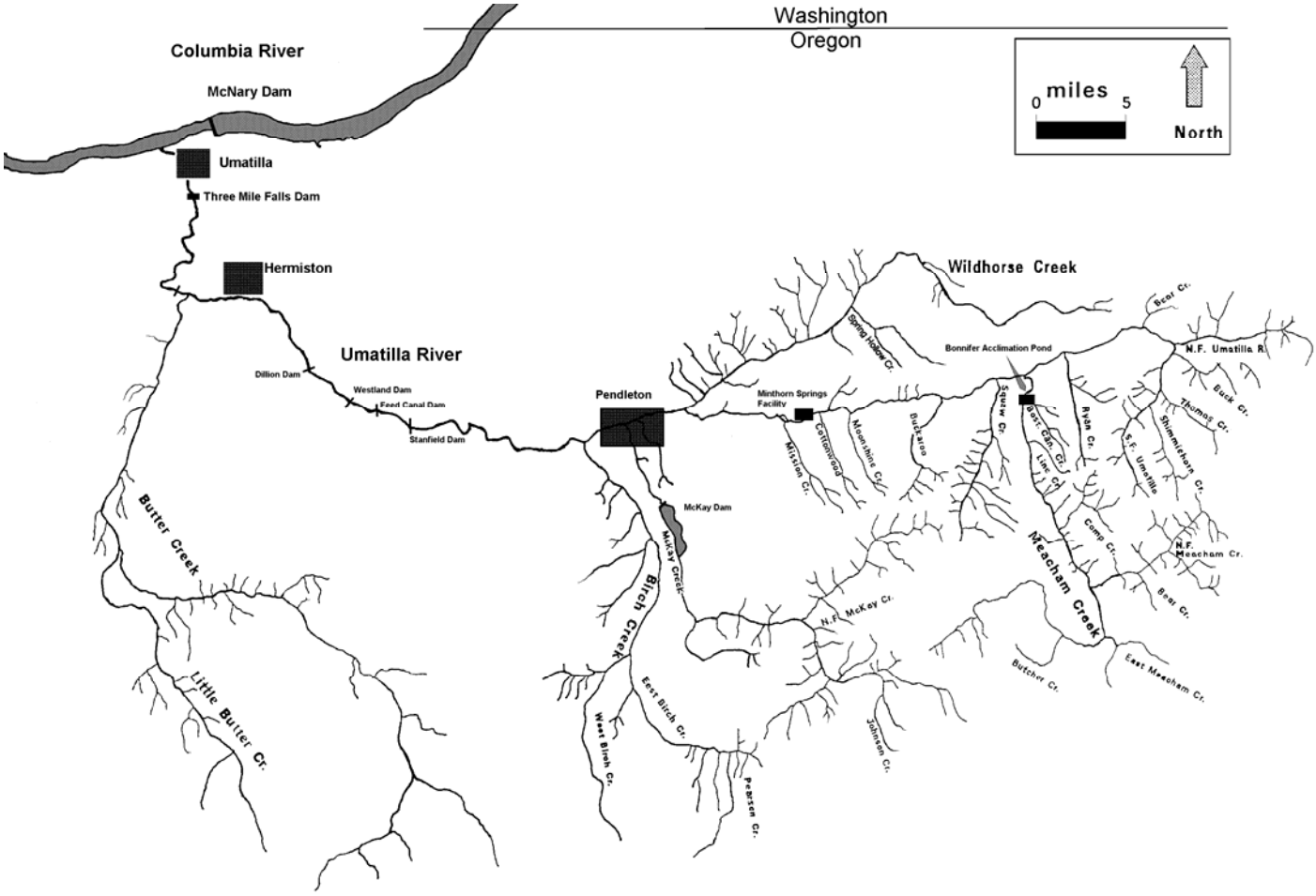
1.2.2) Description of the time periods in which fisheries occur within the management area.

Summer Steelhead: January 1 – April 15 and September 1 – December 31
Spring Chinook: April 16 to June 30
Coho salmon and jack fall Chinook September 1 – November 30
Redband Trout: Fourth Saturday in May to October 31
Warmwater gamefish: Fourth Saturday in May to April 15

1.3) Listed salmon and steelhead affected within the Fishery Management Area specified in section 1.2.

The only known ESA listed steelhead affected within this Umatilla River FMEP are the Middle Columbia River DPS Umatilla summer steelhead and Snake River DPS summer steelhead. Hatchery summer steelhead from the Umatilla River and Snake River may co-mingle with natural populations in this FMEP area. The Umatilla River hatchery summer steelhead stock produced at Umatilla Hatchery are considered to be part of the ESU (71 FR 834). The extent wild adult Deschutes or John Day summer steelhead stray into the Umatilla River is unknown. However, it is unlikely that this occurs to any significant level due to the predominantly low flows and high water temperatures at the mouth of the Umatilla River during the primary adult summer steelhead immigration period in the Columbia River past the Umatilla River (August to mid-October).

Figure 1 Umatilla Basin



1.3.1) Description of "critical" and "viable" thresholds for each population (or management unit) consistent with the concepts in the technical document "Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units."

NOAA Fisheries defines population performance in terms of abundance, productivity, spatial structure, and diversity and provides guidelines for each (McElhany et al. 2000). NOAA Fisheries identifies abundance guidelines for critical and viable population thresholds. Critical thresholds are those below which populations are at relatively high risk of extinction. Critical population size guidelines are reached if a population is low enough to be subject to risks from: 1) depensatory processes, 2) genetic effects of inbreeding depression or fixation of deleterious mutations, 3) demographic stochasticity, or 4) uncertainty in status evaluations. If a population meets one critical threshold, it would be considered to be at a critically low level. Viability thresholds are those above which populations have negligible risk of extinction due to local factors. Viable population size guidelines are reached when a population is large enough to: 1) survive normal environmental variation, 2) allow compensatory processes to provide resilience to perturbation, 3) maintain genetic diversity, 4) provide important ecological functions, and 5) not risk effects of uncertainty in status evaluations. A population must meet all viability population guidelines to be considered viable.

Productivity or population growth rate guidelines are reached when a population's productivity is such that: 1) abundance can be maintained above the viable level, 2) viability is independent of hatchery subsidy, 3) viability is maintained even during poor ocean conditions, 4) declines in abundance are not sustained, 5) life history traits are not in flux, and 6) conclusions are independent of uncertainty in parameter estimates. Spatial structure guidelines are reached when: 1) number of habitat patches is stable or increasing, 2) stray rates are stable, 3) marginally suitable habitat patches are preserved, 4) refuge source populations are preserved, and 5) uncertainty is taken into account. Diversity guidelines are reached when: 1) variation in life history, morphological, and genetic traits is maintained, 2) natural dispersal processes are maintained, 3) ecological variation is maintained, and 4) effects of uncertainty are considered.

This fishery management plan focuses primarily on abundance and productivity which are the two key performance features most directly affected by fishery impacts of the scale we propose. Spatial structure is generally a function of habitat size and distribution. Proposed fisheries do not affect habitat. The small fishery impact rates proposed also will not reduce population sizes to levels where spatial effects are exacerbated. Diversity concerns for Umatilla summer steelhead are primarily related to the effects of natural spawning by hatchery fish. The small, proposed fishery impact rates on wild fish are not expected to exert sufficient selection pressure on any single characteristic to affect diversity. See section 2.1.2 for a more detailed discussion of why the harvest regime is not likely to result in changes to biological characteristics of the affected ESUs.

The viable threshold for summer steelhead populations in the Mid Columbia River ESU was set at 20% of the full seeding spawner estimate based upon the analysis presented by Chilcote (2001). As stated in this report: "*The logic of selecting 20% of 1/**B** as the threshold was based upon the lack of confidence in predicting the response of populations at escapement levels less than this level. The primary reason for this uncertainty was that escapements below these levels have rarely been observed in the data sets. Averaged across all populations and years, only 6% of the spawner escapement data points were less than 0.20/**B**. Therefore, very little information was available to investigate how these populations actually performed at low escapement levels. In light of these shortcomings, it seemed logical that this threshold of uncertainty would suffice as the viable threshold*."

The method to determine the critical threshold was also based upon the approach described by Chilcote (2001) as follows: "*The critical abundance level for each population was determined directly from the PVA model. In the context of PVA models, Mace and Lande (1991) proposed the following standard for endangerment: a 20% probability of extinction over a period of 10 generations. For the purposes of this report, their classification of "endangerment" was assumed to be synonymous with "critical". Adopting this standard, the critical abundance threshold was defined as the number of spawners that if left alone to naturally reproduce for 50 years (approximately 10 generations) would result in the extinction of the population more than 20% of the time. This critical abundance was estimated for each population by seeding each PVA model run with fewer and fewer initial spawners until a 20% extinction probability was achieved*.

The public review draft (March 2001) of this FMEP specified critical and viable abundance thresholds as shown below in Table 2. Upon further discussions with NOAA Fisheries, our critical thresholds were lower than NOAA Fisheries was comfortable with as "trigger points" to further reduce fishery impacts when wild steelhead populations declined to critically low levels. Based on the guideline in McElhaney et al (2000), the viable thresholds were more aligned with NOAA's intentions for critical thresholds. Therefore, "Viable" threshold levels identified in the original FMEP were reclassified to "Critical Fishery Conservation Thresholds" in this revised FMEP and included in Table 2. Subsequent discussions of "viable" and critical" thresholds refer to "population" thresholds listed in Table 2, with the recognition that for fishery conservation triggers, the critical threshold recommenced by NOAA Fisheries (333 6-year average wild steelhead abundance) will be used.

Recently, the Interior Columbia Technical Recovery Team (ICTRT) was charged by NOAA Fisheries to delineate historical steelhead populations within the MCR steelhead DPS and to develop viability criteria for recovery of the populations and the MCR DPS. The ICTRT identified the summer steelhead in the Umatilla River basin (including all of the tributaries) as a single population (ICTRT 2003; 2005). The ICTRT further determined, based on the historic spawning habitat capacity, that the population was categorized as a large population, with an minimum abundance of 1,500 wild adults (ICTRT 2005). Reconciliation of the critical fisheries threshold and the minimum

abundance threshold will be done as part of the conservation/recovery plan that is being developed for the MCR steelhead DPS (see Carmichael et al. 2006).

Table 2. Observed 6-year average wild steelhead abundance, conservation abundance thresholds and pattern of annual fluctuations for Umatilla wild steelhead expressed as total spawners from Chilcote 2000, unpublished draft (Appendix A). Also included is the Critical Fishery Conservation Threshold recommended by NOAA Fisheries.

Population	**Full Seeding**	**50% Seeding**	**Population Viable Threshold**	**Population Critical Threshold**	**Critical Fishery Conservation Thresholds**	**Recent 6-yr Average**
Umatilla	1666	833	333	103	333	1247

1.3.2) Description of the current status of each population (or management unit) relative to its "Viable Salmonid Population thresholds" described above. Include abundance and/or escapement estimates for as many years as possible.

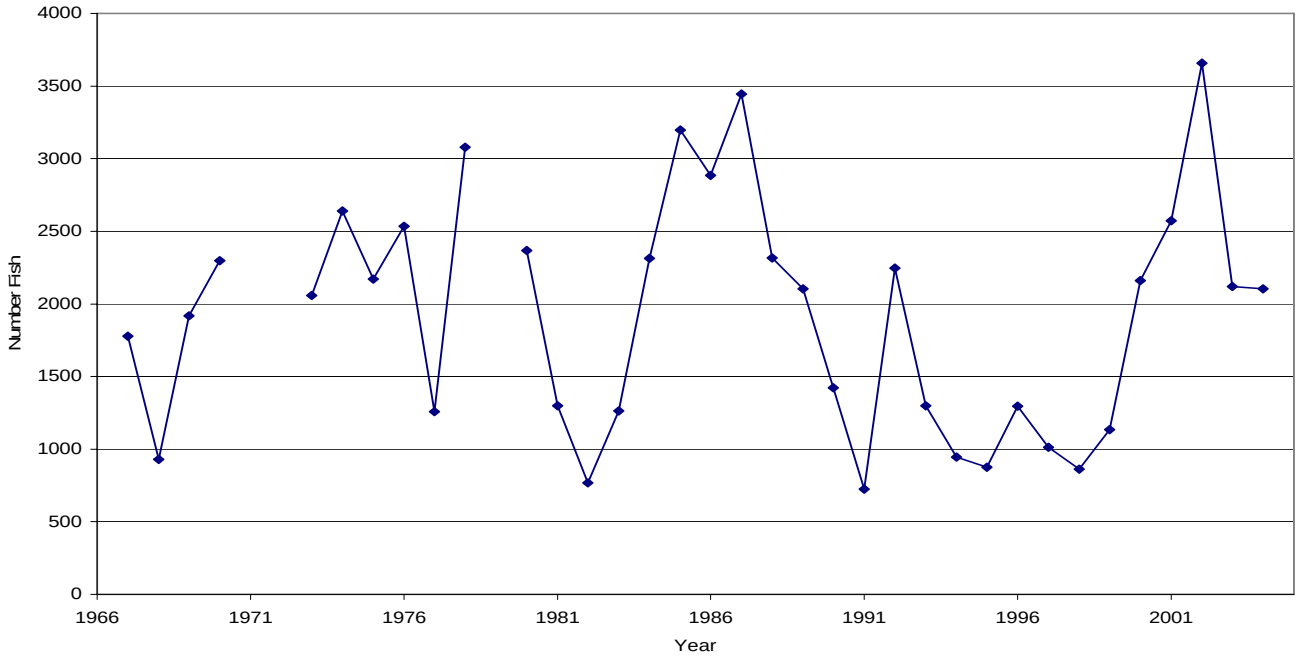
Since 1988 adult steelhead returning to the Umatilla River has been accurately counted by direct observation/handling at the Three Mile Dam adult trapping and collection facility. From 1970 through 1987, various means (including electronic fish counters and trapping) were used to enumerate fish at Three Mile Dam. Counts during this time frame were less accurate, but provided reasonable estimates of adult escapement. Since 1970, adult escapement to the Umatilla basin has been well above the viable threshold (Table 3 and Figure 2).

Table 3. Adult summer steelhead returns to Three Mile Dam on the Umatilla River, 1967-2004. Counts are not available for 1971-1972 and 1979.

Brood Year	Hatchery /1	Wild	Total	% Wild
1967		1778	1778	
1968		930	930	
1969		1917	1917	
1970		2298	2298	
1973		2057	2057	
1974		2640	2640	
1975		2171	2171	
1976		2534	2534	
1977		1258	1258	
1978		3080	3080	
1980		2367	2367	
1981		1298	1298	
1982		768	768	
1983		1264	1264	
1984		2314	2314	
1985		3197	3197	
1986		2885	2885	
1987		3444	3444	
1988	166	2316	2482	93
1989	371	2104	2475	85
1990	246	1422	1668	85
1991	387	725	1112	65
1992	523	2246	2769	81
1993	616	1297	1913	68
1994	345	945	1290	73
1995	657	874	1531	57
1996	785	1296	2081	62
1997	1463	1014	2477	41
1998	903	862	1765	49
1999	750	1135	1885	60
2000	752	2140	2892	74
2001	1091	2571	3662	70
2002	1895	3621	5516	66
2003	963	2117	3080	69
2004	1287	2101	3388	62
2005	756	1722	2478	69
2006	488	1480	1968	75

1/ Hatchery releases likely lead to hatchery returns prior to1988, but hatchery fish were not differentiated.

Figure 2. Returns of wild summer steelhead to Three Mile Dam, Umatilla River, 1967-2004.



Even though the Umatilla population has never been less than twice the viable threshold as determined by Chilcote (2001) (2*333 = 666 wild fish), this population still meets the criteria for a classification of threatened and endangered (Table 4). The primary reason for this result is that the combined population of hatchery and wild spawners produces fewer offspring per spawner than observed for most other steelhead populations in Oregon (Chilcote 2001). Therefore, this population has less resilience and is more vulnerable to extinction. However, this result is extremely sensitive to the discounting procedure for hatchery fish used in the model to estimate these probabilities of extinction (Chilcote 2001). A different, less conservative assumption about the impact of naturally spawning hatchery fish would likely result in model forecasts of near zero extinction probabilities. It is hoped that as more information is collected on this population the discounting factor applied to hatchery spawners can be resolved with less uncertainty in the future.

Table 4. The probability of extinction for Umatilla steelhead with respect to criteria for the classification of endangered and threatened as determined from PVA modeling. From Chilcote (2001)

Population	Threatened	Endangered
Umatilla	**0.98**	**0.54**

Although currently, hatchery and wild fish can be enumerated as they enter the basin with considerable confidence, the actual proportion of hatchery fish in natural spawning areas may differ for a variety of reasons. The actual disposition of adult hatchery origin adults that escape the fishery to spawn in the wild is unknown basin-wide, but evidence

indicates that significant portions of the basin may see a much lower incidence of hatchery spawners than what is counted directly at Three Mile Dam. Spawner escapement in Birch Creek is comprised of 5% hatchery origin fish based on adult trapping activities conducted from 1996 through 1999. On average approximately 30% of the wild adults enumerated at Three Mile Dam escape to spawn in Birch Creek. Approximately 1/3 of the hatchery smolts are currently acclimated and released at the Minthorn Springs satellite facility. This is also the location where steelhead broodstock are held. Minthorn Springs is located at approximately RM 64.5, many miles downstream of primary spawning/rearing areas such as Squaw Creek (RM 76.5), Meacham Creek (RM 80) and mainstem spawning (RM 85) but is upstream from the confluence of Birch Creek (RM 50).

Hypothetically, fish acclimated at the Minthorn Springs facility and escaping the fishery may not be intermingling with wild spawners. However, 50,000 smolts are direct stream released into Meacham Creek, which likely has a high incidence of hatchery spawners. Based upon these and other factors the proportion of hatchery fish on the spawning grounds in future years is expected to average 30%.

Again, while it is ODFW's intent to manage the level of hatchery adults escaping to spawn to maintain the population's viability, consensus on this issue has not been reached with CTUIR. However, management activities such as increase angler access, the recent increase in the daily bag limit for hatchery adults (from 2 to 3 hatchery fish per day), and/or acclimation and release of a component of the hatchery-reared smolts would likely result in fewer hatchery origin spawners.

1.4) Harvest Regime

1.4.1) Provide escapement objectives and/or maximum exploitation rates for each population (or management unit) based on its status.

As indicated above, one of the performance indicators for the population is the escapement of adult wild spawners. **The escapement goal is a 6-year rolling average of at least 650 wild steelhead.** This is set at approximately 2-times the viable population's threshold of 333 (Chilcote 2001), (Appendix A). However this is less than the minimum abundance threshold of 1,500 that was set by the ICTRT (Carmichael et al. 2006)**. For a long-term goal, an escapement of 1666 wild fish is desired for the Umatilla**. However, if substantial improvements in juvenile steelhead habitat capacity and mainstem Columbia passage are achieved, the restoration goal stated in the Umatilla Subbasin Salmon and Steelhead Production Plan (CTUIR and ODFWb) of 4,000 fish may be attainable.

Chilcote (2001) estimated extinction probabilities with respect to a variety of fishery mortality rates and demonstrated that for the Umatilla population there is substantial risk of extinction for harvest greater than 10% (Table 5). **Within the Umatilla, it is estimated the proposed fisheries will result in a mortality rate of approximately 1.5% on the wild population.** This estimate is based on an assumed post-release

mortality rate of 5% and a maximum fishery interception rate for the wild population of 30%. As can be seen in Table 1, the interception rate for wild fish in the most recent six years has been less than 30% and averaged 15%. Therefore, even if the post-release mortality is as high as 10%, the net mortality impact on the wild population will still be less than 2%. This is considerably less than the within basin maximum mortality objective of 5% for wild fish. However, the mainstem Columbia River fisheries as proposed for the future will result in up to an additional 15% mortality on this population. Model results described by Chilcote (2001) suggest such mortality levels increase the risk of extinction for this population substantially.

It is important to note that the mortality rates imposed on the wild population as a result of fisheries covered by this FMEP are 1/10 of those for the Columbia River. If the only fishery causing mortality to this population was the one in the Umatilla, the probability of extinction for this population would essentially be zero (Table 5).

Table 5. PVA simulations of estimated probability of extinction in 50 years for Umatilla steelhead under 16 different hypothetical adult mortality rates.

	Percent Adult Mortality Rate															
Population	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
Umatilla	.01	.08	.21	.57	.85	.98	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

1.4.2) Description of how the fisheries will be managed to conserve the weakest population or management unit.

To protect the wild steelhead population, angling regulations will be maintained to require release of all wild fish caught. Consumptive harvest of wild steelhead is not anticipated in the foreseeable future.

The wild steelhead population in the Umatilla basin is managed as one population. Genetic analyses conducted by Currens and Schreck (1993 and 1995) found no statistically significant variation in genetic or phenotypic characteristics in tributary populations of *O. mykiss* in the Umatilla basin except for a resident population above McKay Reservoir, which was influenced by stocking of hatchery-reared rainbow trout.

The Umatilla non-tribal steelhead fishery is directed at the harvest of hatchery origin fish and has a relatively minor mortality impact on wild fish (less than 1.5%, Table 6). This fishery will be managed based on the six-year rolling average. As long as the rolling average wild spawner escapement is above 650, the current fishery regime will be maintained. However, the trend of wild steelhead is monitored and evaluated annually. If there is a downward trend of wild adult steelhead below the objective of 650, the fishery can be modified to reduce impacts. Possible adjustments could be additional gear restrictions, restriction of the open area and or season length.

There is also a process to make in-year adjustments to fisheries when returns approach the viable and or critical population thresholds. In order to make reasonable predictions for steelhead returns to the Umatilla River, we have developed a regression of Bonneville

Group A counts and Umatilla steelhead counts. This regression is currently used to develop a steelhead return estimate for the Umatilla annual operation plan to provide managers a forecast. As discussed above, the fishery will be managed based on a rolling six-year average. However, the Bonneville predictive tool will also be used to adjust fishery management within-year if escapements are expected to approach and/or go below the viable population threshold.

Table 6. Hooking mortality of wild Umatilla River summer steelhead in the Umatilla River non-tribal fishery.

Run Year	Wild Return	Hooking Mortality \1	Mortality Rate (%) \2
2000-01	2571	9	0.35
2001-02	3621	37	1.02
2002-03	2117	13	0.61
2003-04	2101	15	0.71
2004-05	1722	10	0.58
2005-06	1480	19	1.28

\1 Calculated as 5% of the number of wild fish caught and released.
\2 Mortality rate calculated as a percentage of the wild return to Three Mile Falls Dam.

Mortality on steelhead (adults and smolts) caught and released by spring Chinook salmon anglers is low and does not warrant further restrictions. The Umatilla River spring Chinook fishery occurs in two sections of the Umatilla River. Section 1 from Hwy 730 Bridge upstream to Threemile Dam during April 16 – May 21 and Section two from Threemile Dam upstream to the western boundary of the Umatilla Indian Reservation (RM 55) from April 16 through June 30. This is after most steelhead adults have immigrated above the fishery open area to their spawning areas. Although this fishery occurs through the peak of the steelhead smolt outmigration, the fishing tackle is not conducive to catching of smolts (large hook sizes and large lures).

Significant protection for juvenile steelhead and salmon is also being provided under the current fisheries regulations. Redband trout fisheries in the Umatilla basin have been adapted to protect wild *O. mykiss* in natural production areas. **The upper Umatilla and tributaries upstream from the eastern boundary of the Umatilla Indian Reservation have been catch and release only and flies and lures only for redband trout since 1995.** Streams within the boundaries of the Umatilla Indian Reservation are under jurisdiction of the CTUIR.

Other steelhead production streams including Meacham Creek and Birch Creek have a bag limit of five trout per day with an eight-inch minimum length. Both of these streams have limited public access. The lower 20+ miles of Meacham Creek are only accessible via the Union Pacific Railroad (UPRR) right-of-way, which is managed by UPRR to exclude public entry. The upper part of the Meacham drainage are lands under private ownership. The lands adjacent to Birch Creek are all private with limited public access

available. Mortality due to harvest on these streams, while not quantified, is expected to be low.

The redband trout fishery is open from the fourth Saturday in May to October 31 with an eight-inch minimum length to minimize angling impacts on adult steelhead spawners and outmigrating smolts. The fishery through the summer and fall is then likely focused on resident trout (eight-inch minimum length) rather than younger fish, which could be either resident or anadromous juveniles.

In 1999, all stocking of hatchery rainbow trout was ceased in streams within the Umatilla basin to protect wild stocks of *O. mykiss*. Legal-sized rainbow trout have been historically stocked in many streams throughout the Umatilla basin. However, stocking over the past decade has only occurred in the Umatilla River (downstream of steelhead production areas) and lower McKay Creek. From 1990 through 1993 approximately 8,000 legal sized Cape Cod stock rainbow trout were stocked in the forks area of the upper Umatilla River. In 1994, stocking of legal sized rainbow trout was moved downstream to the Pendleton area to reduce interaction with wild O. *mykiss* in the upper Umatilla River.

The most significant effect of releasing catchable trout in waters home to listed steelhead is the inadvertent harvest of juvenile steelhead in catchable trout fisheries. Cramer and Willis (1998) observed that the release of catchable trout attracts anglers to release locations and that harvest rates of juvenile steelhead are generally proportional to angler effort. In a study of effects to juvenile steelhead from catchable trout fisheries in the Wenatchee River, Washington, Don Chapman Consultants (1989) concluded that sport anglers remove 61% to 87% of wild steelhead longer than 125 mm and kill 2% to 28% of steelhead larger than 100 mm by hook and release. Furthermore, it was found that anglers harvest 72% to 91% of the hatchery rainbow trout soon after release.

Cramer et al. (1997) noted that this quick removal of hatchery trout leaves only juvenile steelhead as the targets for fishermen attracted by the reports of high angler success. This observation is supported by Don Chapman Consultants (1989) finding that "although catchable trout did not displace wild steelhead by direct interaction for space, hatchery trout attracted anglers that killed a large fraction of the juvenile steelhead in the river." Their underwater observations also indicated that wild steelhead were more susceptible to angling that hatchery trout because steelhead reacted faster to lures and bait. Pollard and Bjornn (1973) made similar observations, noting in a study on the Crooked Fork of the Lochsa River, Idaho, that most of the larger juvenile steelhead trout present in the retention area of the river were caught at a faster rate than the smaller age 1 steelhead and the hatchery trout given the same level of effort.

Fisher (1961, as described by Cramer et al. 1997) surveyed angler effort in the Big Sur River, California, observing that anglers caught an estimated 90% of the catchable trout released, but wild trout made up 24% of total catch. The angler catch of wild fish was 7 times greater than the number of wild fish counted as outmigrants to the river during the same period. This experiment was conducted during the peak spring migration period for

steelhead smolts. All these studies show that natural steelhead are more susceptible to angling than catchable trout when the two are present together and that angler effort is directly related to the presence of catchable trout releases. These studies lead to the conclusion that removing the catchable trout program from the Umatilla River will benefit ESA listed steelhead.

Fishing effort is currently much lower than in previous years because of the elimination of hatchery catchable trout stocking in the Umatilla River and the conservative, selective fishing regulations currently in place. It is difficult to quantify the impacts to juvenile steelhead from sport fishing because of the lack of information specific to the Umatilla River. However, given the current regulations that are in place for juvenile steelhead, the dispersed nature of the fishery and cessation of trout stocking, it is estimated that <1% or rearing juvenile steelhead in the Umatilla River subbasin are caught and released in the trout fishery.

The warmwater game fish fishery is focused in the lower Umatilla River downstream from Echo. This isolates the fishery from areas where anglers would be likely encounter significant numbers of steelhead parr. Smolts and adults are the only life history forms that would be expected in the lower Umatilla River. Adult wild steelhead are required to be released unharmed. The warmwater gamefish fishery is closed from April 16 through the third Saturday in May, the peak of the steelhead smolt outmigration. During creel census of fall and spring salmon fisheries and the steelhead fishery, personnel also census warmwater anglers to gather baseline data on this fishery (Table 7). These data show that warmwater anlgers do not catch many smolts.

Table 7. Catch data for anglers targeting warmwater fish collected during creel surveys on the lower (RM 0-3) and upper (RM 37-55) Umatilla River, 1998-1999 and 1999-2000 fisheries.

Year	No. days sampled	No. anglers	No.hr fished	Bass	Perch	N.Pike-minnow	Trout or native steelhead smolt Kept	Released
Lower River								
98-99	68	154	186	9	2	0	1	0
99-00	109	188	205	118	2	3	0	0
Upper River								
98-99	69	26	18	1	0	13	0	0
99-00	40	4	4	0	0	0	0	0
Total	286	372	413	128	6	16	1	0

1.4.3) Demonstrate that the harvest regime is consistent with the conservation and recovery of commingled natural-origin populations in areas where artificially propagated fish predominate.

The Umatilla River steelhead harvest strategy is directed solely on the harvest of fin-marked hatchery origin steelhead. The angler can legally retain only steelhead with a missing adipose fin. Gear restrictions, season and open area, and a consistent high level of fishery law enforcement all work to minimize the loss of wild steelhead. No hatchery steelhead deemed essential to the survival of the species have been documented in Umatilla River.

1.5) Annual Implementation of the Fisheries

The Oregon Fish and Wildlife Commission (Commission) adopts angling regulations every year with and extensive public involvement process every four years. This process begins about one year in advance of when specific regulations are actually adopted. Current regulations require release of wild (unmarked) steelhead in the Umatilla River and trout and warmwater fisheries are designed to protect juvenile steelhead. The general steelhead season for the Umatilla River is September 1 – April 15.

Numbers of steelhead returning to the Umatilla basin can be estimated by determining the number of wild A-run steelhead passing over Bonneville Dam. This relationship has been described in Section 1.1.1 of this plan. These estimates are available by the end of August each year, which is usually at least a month prior to significant numbers of steelhead entering the Umatilla River. If estimates of wild A-run steelhead counted at Bonneville Dam indicate additional conservation measures are necessary, then emergency regulations further restricting fisheries can be implemented.

There is also a process in place to implement regulations on a much shorter time schedule than every four years that addresses emergency conditions. These emergency regulations can be adopted by the Commission within 2 weeks if a Commission meeting is scheduled near the same date. The Commission has also delegated to the Director of ODFW the authority to adopt emergency regulations. If the Director adopts emergency regulations, they can be implemented within a matter of days from the time they are submitted.

SECTION 2. EFFECTS ON ESA-LISTED SALMONIDS

2.1) Description of the biologically based rationale demonstrating that the fisheries management strategies will not appreciably reduce the likelihood of survival and recovery of the affected ESU(s) in the wild.

The objective of the proposed harvest regime is to ensure that harvest of hatchery steelhead and catch and release of wild steelhead is consistent with the recovery of listed populations in the Umatilla basin. The conservative in-river harvest strategies proposed in this FMEP are thought to meet the objective of population recovery. Because the proposed fishery management strategies result in fishery mortality rates that are substantially less than the 20% maximum fishery mortality rate recommend by Chilcote (2001) for populations of steelhead in Oregon (<1.5% under catch and release

regulations) the proposed fishery in the Umatilla basin should not reduce the likelihood of survival and recovery of the affected population.

The proposed harvest management strategy to limit the cumulative fishery impacts on wild fish to less than 10% mortality is expected to result in an acceptable level of extinction risk based upon the analysis of Chilcote (2001) and recent information about this population presented in this plan. Specifically, the number of wild fish returning to the Umatilla has remained greater than twice the viable level for the past 30 years. Therefore, it would appear that implementing an even more conservative management strategy, as proposed in this plan, would provide adequate protection to wild steelhead in the Umatilla.

However, the success of this strategy is contingent on restricting the percentage of hatchery fish on the spawning grounds of 30%, at least in the long-term.

Table 8. Estimated total harvest and hooking mortality on wild Umatilla summer steelhead in ocean, Columbia river net and sport, and Umatilla River non-tribal and tribal fisheries., Percent mortality based on all adults produced. We assumed 5% hooking mortality.

Year	Ocean Fisheries \1	Col. River Net Fisheries \1	Col. River Sport \1	Umatilla Non-Tribal \2	Umatilla Tribal \3	Total
1994-95	0.4	9.8	0.1	0.9	1.1	12.3
1995-96	0.0	8.5	0.4	0.6	0.7	10.2
1996-97	0.0	6.0	0.3	0.8	0.7	7.8
1997-98	0.0	10.1	0.4	1.2	1.7	13.4
1998-99	0.0	4.2	0.1	1.1	1.6	7.0
1999-00	0.0	7.7	0.2	1.0	0.9	9.8
2000-01	0.0	6.3	0.3	0.3	0.5	7.4
2001-02	0.2	1.1	0.5	1.0	1.3	4.1
2002-03	0.0	5.7	0.1	0.6	0.8	7.2
2003-04	0.0	2.1	0.0	0.7	1.0	3.8
Average	0.1	6.2	0.2	0.8	1.0	8.3

\1 Based on data presented in Table 9.

\2 Hooking mortality only. Number of released fish estimated from creel surveys.

\3 Harvest plus hooking mortality. CTUIR reports tribal harvest but not numbers of released fish. We estimated number of wild steelhead caught in the tribal fishery from the approximate mean proportion of caught wild steelhead to harvested hatchery steelhead (3.0) determined by creel surveys of the non-tribal fishery from 1992-2005. Number released = Number caught – Number harvested.

In consideration of the opportunities to affect the population status by changing hatchery program management strategies as indicated in previous discussion, maintaining fishery status quo seems reasonable. The in-basin fishery is catch and release of wild fish and harvest of hatchery origin fish. The estimated indirect mortality to wild fish resulting from the in-basin is relatively small (less than 1.5 percent since the catch and release fishery was implemented, Table 6). The mean combined impact of in and out-of basin fisheries puts mortality within the 10% limit suggested by the PVA (Table 8) and established as a plan objective in section 1.1.1

2.1.1) Description of which fisheries affect each population (or management unit).

Umatilla River fisheries that affect listed Middle Columbia DPS steelhead include the sport summer steelhead, spring Chinook, redband trout and warmwater species fisheries.

The Umatilla River steelhead fishery is directed at the harvest of hatchery steelhead. The season occurs from September 1 through April 15 and the open area is from the mouth (Hwy 730 bridge) upstream to the western boundary of the Umatilla Indian Reservation near the Highway 11 Bridge in Pendleton. The entire upper basin has been set aside as an adult steelhead sanctuary area and is closed to steelhead angling. The daily bag limit is restricted to adipose fin-clipped steelhead only. Wild (non-finclipped) steelhead are required to be released unharmed.

The Umatilla River has a spring Chinook fishery on the hatchery reintroduced run of Carson stock fish. Approximately 710,000 yearling spring Chinook smolts are released into the basin to meet objectives for harvest, natural spawning escapement, broodstock and monitoring and evaluation. In the past, the season was set annually based on estimated returns. Beginning in 2001 there will be a standard season printed in the Oregon Sport Fishing Regulations. The season is open April 16 through June 30. The open area is the same as the steelhead fishery above.

Redband trout angling in the Umatilla basin where anadromous fish are present is open from the fourth Saturday in May through October 31. Non-anadromous fish streams are open to angling for redband trout from the fourth Saturday in April through October 31. All waterways in the basin are open to fishing for redband trout during the appropriate season. There are no closed areas. Trout angling in the Umatilla River and tributaries upstream from the eastern boundary of the Umatilla Indian Reservation is restricted to catch and release, flies and lures only in order to protect this major juvenile steelhead production area. The daily bag limit for the remaining waters is five fish over eight inches in length.

The fishery for warmwater gamefish in the Umatilla basin is open from the fourth Saturday in May through the following April 16. The entire basin is open during the season, however, the angling effort occurs primarily in the lower Umatilla River downstream from the City of Echo (RM 23).

2.1.2) Assessment of how the harvest regime will not likely result in changes to the biological characteristics of the affected ESUs biological characteristics of the affected ESUs.

The current and proposed harvest regime for Umatilla River steelhead, trout, and warmwater fish has not and will not result in changes to the biological characteristics of wild Umatilla River steelhead. These characteristics have been and will continue to be monitored as part of the monitoring and evaluation portion as described in Section 3.1 of

this FMEP. Regulations requiring catch and release of wild steelhead have been in effect since 1992. Mortality to Umatilla River wild steelhead by sport anglers, as a result of incidental hook and release mortality, has not and will not affect the biological characteristics of the listed steelhead.

Any fisheries management strategy that includes harvest has both direct and indirect harvest. Direct harvest takes place when legally caught fish are retained as part of the daily limit. This FMEP does not propose direct harvest of wild steelhead in the Umatilla River in the near term. This FMEP focuses on maintaining wild harvest rates that are consistent with recovery of the population. The small hook and release mortality rates to Umatilla River steelhead covered under this plan are not expected to exert selective pressure on any single characteristic that will affect genetic diversity since both the existing and proposed fisheries would encompass the entire spectrum of run-timing and be conducted on a mix of all the sub-populations, the probability of changing biological characteristics is very small.

2.1.3) Comparison of harvest impacts in previous years and the harvest impacts anticipated to occur under the harvest regime in this FMEP.

Harvest rates of adult steelhead in Umatilla River prior to the start of mandatory wild release regulations in 1992 are unknown. Cramer et al (1997) reviewed harvest rates of adult steelhead in sport fisheries in Oregon and Washington prior to wild release regulations and concluded that harvest rates on wild summer steelhead were in the neighborhood of 50%. Harvest rates in Umatilla River could have been of this magnitude during some years.

Harvest rates for adult steelhead specific to the subbasin are for available return years 1993 through 2005 (T. Bailey, personal communication) (Table 6). Mandatory wild steelhead release rules were in effect these years. **Based on run size and catch rates from T. Bailey, personal communication, we estimate that less than 1.5% of any annual wild steelhead run would potentially be lost from incidental hook and release mortality in the Umatilla River adult steelhead fishery (see Section 1.4.1**). We anticipate that harvest impacts under the FMEP harvest regime will be very small and identical to the less than 1.5% calculated above and certainly much less than the estimated 50% prior to wild release regulation.

Past harvest impacts to juvenile steelhead as a result of trout fisheries in the Umatilla River are unknown. Cramer et al (1997) were of the opinion that the greatest sport harvest of steelhead in recent times may have been on juveniles taken in trout fisheries, rather than on adults. This was likely the case in Umatilla River considering the regulations and management practices in place for many years. For example, the forks area of the upper Umatilla River, believed to be important summer steelhead spawning and rearing stream, was stocked with catchable trout until 1994. Natural bait was also allowed for trout fishing in this reach of river until after 1994 when bait was banned.

The more restrictive angling regulations presently in place for trout and the cessation of all trout stocking in the Umatilla River after 1999 provides significantly greater protection to juvenile steelhead from angling mortality than occurred historically. Angling regulations currently in place (wild steelhead catch and release) also result in much lower harvest impacts for adult steelhead than past regimes.

2.1.4) Description of additional fishery impacts not addressed within this FMEP for the listed ESUs specified in section 1.3. Account for harvest impacts in previous year and the impacts expected in the future.

Other fisheries that could impact total mortality of Umatilla River steelhead include ocean fisheries and Columbia River net and sport fisheries downstream from the Umatilla River – Columbia River confluence. Ocean mortality is almost negligible. Mortality associated with the Columbia River commercial net fisheries averaged 6.2% from 1994-2003. An agreement has been reached with the treaty tribes fishing to limit harvest of steelhead in the Columbia River tribal net fishery to less than 15% (ODFW 2000). The combined mainstem Columbia net and sport fishery mortality averaged 6.5% from 1994-2003.

Table 9 shows an estimate of harvest and hooking mortality on wild Umatilla steelhead in the ocean and Columbia River based on coded wire tag recoveries of hatchery origin Umatilla steelhead. This interpretation is based on the assumption that hatchery and wild fish are equally vulnerable to fisheries. We did not include impacts from fisheries in tributary streams of the Columbia River because we assumed wild fish do not exhibit this behavior observed in hatchery fish. Also, no coded-wire tags were recovered in the Columbia River non-tribal net fishery during this time frame.

The additive mortality on wild Umatilla steelhead from ocean fisheries, Columbia River net and sport fisheries, and the non-tribal and tribal Umatilla River sport fisheries is well below the 20% target under current management scenarios (Table 8). The Columbia River steelhead sport fishery and non-tribal Umatilla River steelhead fishery are managed as catch and release for wild fish.

Table 9. Estimated out-of-basin harvest mortality of wild Umatilla River summer steelhead based on coded-wire tag recovery rates for Umatilla hatchery summer steelhead. Mortality as percent of all adults. Source data from ODFW.

Run Year	Ocean (%)	Columbia River Nets (%)	Columbia River Sport (%)	Total (%)
1994-95	0.4	9.8	0.1	10.3
1995-96	0.0	8.5	0.4	8.9
1996-97	0.0	6.0	0.3	6.3
1997-98	0.0	10.1	0.4	10.5
1998-99	0.0	4.2	0.1	4.3
1999-00	0.0	7.7	0.2	7.9
2000-01	0.0	6.3	0.3	6.6
2001-02	0.2	1.1	0.5	1.8
2002-03	0.0	5.7	0.1	5.8
2003-04	0.0	2.1	0.0	2.1
Mean	**0.1**	**6.2**	**0.2**	**6.5**

SECTION 3. MONITORING AND EVALUATION

3.1) Description of the specific monitoring of the "Performance Indicators" listed in section 1.1.3.

The Umatilla Fish Passage Operations Project (BPA funded Project, CTUIR is the project sponsor) monitors the return of all anadromous fish runs to the Umatilla at Three Mile Dam. Steelhead are either enumerated by trapping/direct handling or by counting at a viewing window. This activity is expected to continue into the foreseeable future. The entire steelhead run will be enumerated. Current operations at Three Mile Dam include enumeration by trapping/direct handling from August 15 to December 1, then alternating between 9 days counting at the viewing window and 5 days trapping from December 1 through July 15 (operations default to trapping if river conditions trigger adult hauling operations or video enumeration hinders out ability to meet broodstock collection goals).

The Umatilla Hatchery Monitoring and Evaluation (BPA funded project) currently conducts a statistical creel census of the Umatilla River steelhead fishery for its entire duration. This activity will be continued to estimate the number of steelhead caught, of both hatchery and wild origin. The creel census is conducted in the most accessible reaches open for sport steelhead angling in the Umatilla River.

3.2) Description of other monitoring and evaluation not included in the Performance Indicators (section 3.1) which provides additional information useful for fisheries management.

Natural Production M&E: This project evaluates the natural production of salmon and steelhead in the Umatilla River Basin (Contor et al. 1996, 1997, and 1998). Natural production monitoring began in the Umatilla basin during the fall of 1992, ten years after the hatchery program started with the construction of two juvenile acclimation facilities in 1982 and releases of hatchery fall Chinook in 1983. The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and the Oregon Department of Fish and Wildlife (ODFW) developed the Umatilla Hatchery Master Plan to restore salmon and steelhead to the basin (CTUIR and ODFW 1990a). The plan was completed in 1990 and included monitoring and evaluation that evaluates the implementation of the Umatilla River Basin Fisheries Restoration Plans with respect to natural production and tribal harvest.

Umatilla River Outmigration and Survival Study: Rehabilitation of anadromous fish stocks in the Umatilla River basin in northeastern Oregon requires the enhancement of existing populations of summer steelhead (*O. mykiss*) as well as restoration of other salmonid species. Evaluation of the Restoration Program required an evaluation of in-basin survival and productivity to answer critical uncertainties related to overall population status and trends. The primary goal of the Outmigration and Survival project is to determine the abundance and survival of juvenile migrants leaving the Umatilla basin. Project research also evaluated survival potential of hatchery fish within different river reaches below the standard release site. Results from research findings could be used to alter release sites for summer steelhead in an effort to improve their survival.

Currently, steelhead reared at Umatilla Hatchery and tagged with PIT tags are released and monitored at detection sites in the lower Umatilla River and at mainstem dams. The project PIT tags wild steelhead in the lower Umatilla River. Relative detections of hatchery and wild steelhead provide a estimates of wild steelhead smolt abundance at the lower Umatilla River and wild steelhead survival thru the mainstem Columbia River.

3.3) Public Outreach

Anglers will be informed of fishery seasons and bag limit changes through:

The Oregon Sport Fishing Regulations Pamphlet published each December.

- Signs at public access points along the Umatilla River.
- “Emergency Notice” flyers distributed to license vendors, district ODFW offices and on the ODFW web site.
- Regional Newspapers, and radio stations.

Anglers are also informed of regulation changes through the public meeting process to develop regulations, through creel checkers, Oregon State police and office inquiries. Oregon State Police patrols indicate a high compliance rate with steelhead angling regulations.

3.4) Enforcement

The Fish and Wildlife Division of the Oregon State Police (OSP) is responsible for the enforcement of fish and wildlife regulations in the State of Oregon. The Coordinated Enforcement Program (CEP) is a program designed to coordinate effective enforcement by ensuring the development of enforcement priorities and plans by and between OSP enforcement officers and ODFW biologists. Other parties such as Tribes, United States Forest Service enforcement officers, local landowners, angling club representatives, and interested citizens are invited to participate in annual meetings to develop enforcement priorities. This involvement is critical as perspectives of user groups and other enforcement bodies are incorporated in the decision making process. ODFW Fish biologists set conservation needs as the highest enforcement priorities.

At coordination meetings, OSP officers share the previous year's results (compliance rates, compliance problems) with ODFW Biologists to assist in improving effectiveness and to assist in the development of angling regulations. All angling regulations developed by ODFW biologists are reviewed by OSP fish and wildlife officers to insure that the regulations are enforceable and can be done so effectively and efficiently.

Through standard enforcement patrols, OSP officers become aware of possible conservation problems (example: illegal harvest of a sensitive species during a season for other species). These issues are discussed at coordination meetings and strategies developed for solving the problem (development of enforcement strategies and/or development of angling regulation proposals).

3.5) Schedule and process for reviewing and modifying fisheries management.

3.5.1) Description of the process and schedule that will be used annually to evaluate the fisheries, and revise management assumptions and targets if necessary.

The Umatilla Management, Monitoring and Evaluation Oversight Committee (UMMEOC) was developed several years ago as a means of sharing information between the several fishery monitoring and evaluation projects in the basin and fish management staff. This committee is also an action body. When new information identifies a problem or points to a suggested change, the committee takes action in the form of collecting additional information to evaluate a problem, or by developing recommendations for program changes to be further evaluated by policy level personnel. Participating entities include the ODFW, CTUIR, BOR, NMFS and BPA. This committee meets on a monthly basis.

Fisheries and management assumptions discussed in this plan will be evaluated each year by Umatilla District staff in consultation with appropriate Portland Headquarters and CTUIR staff. The above discussed suite of monitoring activities will provide adequate data at a sufficient level of detail to evaluate whether this plan is accomplishing the stated objectives.

3.5.2) Description of the process and schedule that will occur every 5 years to evaluate whether the FMEP is accomplishing the stated objectives. The conditions under which revisions to the FMEP will be made and how the revisions will likely be accomplished should be included.

A revision of this FMEP will be initiated after completion of Mid Columbia River Steelhead ESU Conservation/Recovery Plan. One of the preliminary steps in completion of this conservation plan is development of ODFW's Oregon Native Fish Status Report (completed in early 2006), which evaluates Species Management Units (SMU) to specific "Interim Criteria". These criteria include an assessment of population distribution (comparison of existing to historical number of populations, population distribution, (percentage of historical range occupied), population abundance, population productivity, reproductive independence, and hybridization. ODFW's Stock Status Report includes information on the Umatilla River summer steelhead population. It is likely that criteria in the Conservation/Recovery Plan will differ somewhat from interim criteria used in ODFW's Oregon Native Fish Status Report but will incorporate criteria that address conservation and recovery issues.

It is anticipated that ODFW will complete Mid Columbia River Steelhead DPS Conservation/Recovery Plan within the five-year FMEP evaluation time-period (Draft plan is expected in 2007). This conservation plan will include updates to steelhead population and fishery monitoring parameters listed in this FMEP as well as updates to the Population Viability Analysis. It is expected that the revised FMEP will incorporate all of Oregon's summer steelhead populations within the mid Columbia River Summer Steelhead ESU (Deschutes, Umatilla, Walla Walla, and John Day rivers). Revisions to mid Columbia FMEPs will also incorporate of elements of the Interior Columbia Basin Technical Review Team Report on the Viability Criteria for Application to Interior Columbia Basin Salmonid ESU's (ICTRT July, 2005). A significant portion of the ICTRT's viability assessment methodology is included in ODFW's Native Fish Conservation Policy interim criteria.

Subsequent comprehensive reviews of the Mid Columbia River Summer Steelhead FMEP will be conducted every five years. Brood year survival for wild summer steelhead in the Umatilla River can be assessed during this five year period, given average lengths of summer steelhead freshwater and ocean residency. Comprehensive reviews will be repeated at that interval until such time as the DPS is declared recovered and is de-listed. Revisions to the Umatilla River component of the Mid Columbia River Summer Steelhead FMEP will be made as performance indicators suggest that the stated objectives are not being met. Revisions will we undertaken in cooperation with appropriate ODFW Fish Division and Region staff, NMFS staff, the interested public and our tribal co-managers. The Technical Review Team will be consulted during the periodic review process. Revision of FMEP will include changes and updates in the Population Viability Analysis and viable and critical thresholds.

This FMEP was initially submitted in March of 2001 and has been pending NOAA Fisheries review and approval. This revised FMEP includes some of the changes requested of NOAA Fisheries but do not include updates to all population data sets. Comprehensive updates and re-assessments of population viability will be included in Conservation Plans developed as part of Native Fish Conservation Policy Implementation. Given the current low impact rates for the existing steelhead fisheries in the Umatilla River (1.0% tribal and 0.8% non-tribal), mainstem Columbia River (0.2% sport and 6.2% net), and ocean (0.1%), it is unlikely that any re-assessment of these fisheries, during this interim time period will result in wild steelhead impacts rates that exceed 20%. Also, the current selective steelhead fishery (adipose fin-marked) in the Umatilla River is a valuable management tool to reduce the number of hatchery origin fish escaping to spawn.

SECTION 4. CONSISTENCY OF FMEP WITH PLANS AND CONDITIONS SET WITHIN ANY FEDERAL COURT PROCEEDINGS

The actions and objectives of this FMEP are subject to and consistent with the Columbia River Fish Management Plan (U.S. v Oregon). The Umatilla Basin Salmon and Steelhead Production Plan (CTUIR and ODFW 1990) and the Umatilla Hatchery Master Plan are the foundation documents of the Umatilla River steelhead hatchery program. This program (the planning documents) were developed cooperatively by the CTUIR and ODFW. Fish management and facility operation plans are set annually through the joint development of an annual operation plan (AOP).

This FMEP was developed by the ODFW and reviewed by CTUIR. The Umatilla River hatchery steelhead program Hatchery and Genetics Management Plan was developed jointly. Execution of the Umatilla steelhead hatchery program is a joint effort. Both parties play significant roles. ODFW currently operates Umatilla Hatchery, carries out the Umatilla Hatchery Monitoring & Evaluation Project, jointly implements the Fish Passage Operations Project with CTUIR and carries out the Juvenile Outmigration Monitoring and Evaluation Project. CTUIR operates the acclimation facilities and adult holding and spawning facilities, carries out the Natural Production Monitoring and Evaluation Project and jointly conducts the Fish Passage Operations Project with ODFW. Several of these projects, including the Umatilla Hatchery Monitoring and Evaluation Project, Fish Passage Operations Project and Natural Production monitoring and Evaluation Project will contribute information used in the monitoring and evaluation of this FMEP.

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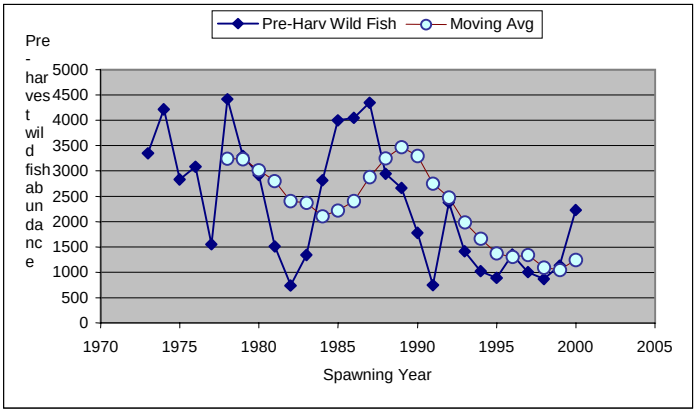
Appendix A. "Population at glance" data summary for Umatilla steelhead.

Basin:	**Umatilla**
Population:	**Umatilla**
Sub-population:	
Monitoring sites:	**Threemile Dam Trap**
Method:	**Total count of returning fish.**

Critical Threshold	103
Viable Threshold	333
Last 6-yr Average	**1247**



Average Distribution of Ages at time of spawning

Repeat	Age 2	Age 3	Age 4	Age 5	Age 6
0.05	0.00	0.29	0.48	0.18	0.00

Note: Spawner numbers account for wild and hatchery fish removed for broodstock at 3-mile dam - as does pre-harv abundance

Spawning Year	SpwnrsWild	SpwnrsHatc	Effective Tot. Spwnrs	Wild Fish Harvest Rates Out-basin	In-basin	Combined	Pre- Harv Pre-Harv Wild Fish	6-yr Moving Avg
1973	2057	0	2057	0.301	0.12	0.39	3346	
1974	2640	0	2640	0.289	0.12	0.37	4217	
1975	2171	0	2171	0.128	0.12	0.23	2830	
1976	2534	0	2534	0.067	0.12	0.18	3086	
1977	1258	0	1258	0.078	0.12	0.19	1551	
1978	3080	0	3080	0.208	0.12	0.30	4421	3242
1979	2337	0	2337	0.196	0.12	0.29	3304	3235
1980	2367	0	2367	0.079	0.12	0.19	2919	3019
1981	1218	0	1218	0.087	0.12	0.20	1516	2800
1982	608	0	608	0.069	0.12	0.18	742	2409
1983	1103	0	1103	0.069	0.12	0.18	1346	2375
1984	2262	0	2262	0.088	0.12	0.20	2819	2108
1985	3093	0	3093	0.121	0.12	0.23	3998	2223
1986	2816	0	2816	0.209	0.12	0.30	4047	2411
1987	3296	0	3296	0.139	0.12	0.24	4348	2883
1988	2183	166	2349	0.158	0.12	0.26	2946	3251
1989	1944	371	2315	0.172	0.12	0.27	2668	3471
1990	1315	246	1561	0.161	0.12	0.26	1781	3298
1991	625	387	1012	0.160	0.01	0.17	751	2757
1992	2010	523	2533	0.147	0.01	0.16	2381	2479
1993	1172	616	1788	0.164	0.01	0.17	1417	1991
1994	853	345	1198	0.155	0.01	0.16	1020	1669
1995	789	656	1445	0.105	0.01	0.11	890	1373
1996	1196	785	1981	0.106	0.01	0.11	1351	1302
1997	906	1463	2369	0.090	0.01	0.10	1006	1344
1998	773	802	1575	0.105	0.01	0.11	872	1093
1999	1024	661	1685	0.090	0.01	0.10	1136	1046
2000	2032	713	2745	0.079	0.01	0.09	2229	1247